

AMENDMENTS TO THE CLAIMS

CLAIM 1 (ORIGINAL): A shift control device for a bicycle transmission comprising:
a mounting member adapted to mount the shift control device to a bicycle;
a first lever operatively coupled to the mounting member such that the first lever stops at a plurality of positions corresponding to gear positions of the bicycle transmission, wherein the first lever moves in a first plane;
a second lever operatively coupled to the mounting member for movement in a second plane between a rest position and an operating position such that the second lever returns to the rest position after moving to the operating position;
wherein the first plane is substantially parallel to the second plane;
a positioning unit that rotates to a plurality of positions corresponding to gear positions of the bicycle; and
a positioning member that moves relative to the second lever and that is controlled by the second lever to operate the positioning unit.

CLAIM 2 (ORIGINAL): The device according to claim 1 wherein the first lever rotates within the first plane.

CLAIM 3 (ORIGINAL): The device according to claim 1 wherein the second lever rotates within the second plane.

CLAIM 4 (ORIGINAL): The device according to claim 1 wherein the positioning unit moves to the plurality of positions corresponding to gear positions of the bicycle in response to movement of the first lever and the second lever.

CLAIM 5 (ORIGINAL): The device according to claim 4 wherein the positioning unit moves in a first positioning unit direction in response to movement of the first lever, and wherein the positioning unit moves in a second positioning unit direction opposite the first positioning unit direction in response to movement of the second lever.

CLAIM 6 (ORIGINAL): The device according to claim 5 wherein the first lever moves in a first lever direction to move the positioning unit in the first positioning unit direction, wherein the second lever moves in a second lever direction to move the positioning unit in the second positioning unit direction, wherein the first lever direction is the same as the second lever direction.

CLAIM 7 (ORIGINAL): The device according to claim 5 wherein the first lever rotates in a first lever direction to move the positioning unit in the first positioning unit direction, and wherein the second lever rotates in a second lever direction to move the positioning unit in the second positioning unit direction.

CLAIM 8 (ORIGINAL): The device according to claim 7 wherein the first lever direction is the same as the second lever direction.

CLAIM 9 (ORIGINAL): The device according to claim 5 wherein the positioning member maintains the positioning unit in each of the plurality of positions corresponding to gear positions of the bicycle.

CLAIM 10 (ORIGINAL): The device according to claim 9 wherein the positioning member allows the positioning unit to move in the second positioning unit direction in response to movement of the second lever.

CLAIM 11 (ORIGINAL): The device according to claim 10 further comprising a motion limiting member that limits movement of the positioning unit in response to movement of the second lever.

CLAIM 12 (ORIGINAL): The device according to claim 11 wherein the motion limiting member is retained to the second lever.

CLAIM 13 (ORIGINAL): The device according to claim 12 wherein the motion limiting member is one piece with the second lever.

CLAIM 14 (ORIGINAL): The device according to claim 1 wherein the first lever and the second lever are coupled to the mounting member such that the first lever and the second lever are

located above the bicycle handlebar when the shift control device is mounted to the bicycle handlebar.

CLAIM 15 (ORIGINAL): A shift control device for a bicycle transmission comprising:
a mounting member adapted to mount the shift control device to a bicycle;
a first lever operatively coupled to the mounting member such that the first lever stops at a plurality of positions corresponding to gear positions of the bicycle transmission;
a second lever operatively coupled to the mounting member for movement between a rest position and an operating position such that the second lever returns to the rest position after moving to the operating position;
a positioning unit that rotates to a plurality of positions corresponding to gear positions of the bicycle; and
a motion limiting member retained to the second lever to limit motion of the positioning unit during operation of the second lever.

CLAIM 16 (ORIGINAL): The device according to claim 15 wherein the motion limiting member moves together with the second lever.

CLAIM 17 (ORIGINAL): The device according to claim 16 wherein the motion limiting member is one piece with the second lever.

CLAIM 18 (ORIGINAL): The device according to claim 15 wherein the positioning unit rotates in a first positioning unit direction in response to movement of the first lever, and wherein the positioning unit rotates in a second positioning unit direction opposite the first positioning unit direction in response to movement of the second lever.

CLAIM 19 (ORIGINAL): The device according to claim 18 wherein the first lever moves in a first lever direction to rotate the positioning unit in the first positioning unit direction, wherein the second lever moves in a second lever direction to rotate the positioning unit in the second positioning unit direction, and wherein the first lever direction is the same as the second lever direction.

CLAIM 20 (ORIGINAL): The device according to claim 15 wherein the first lever rotates in a first lever direction to move the positioning unit in the first positioning unit direction, and wherein the second lever rotates in a second lever direction to move the positioning unit in the second positioning unit direction.

CLAIM 21 (ORIGINAL): The device according to claim 20 wherein the first lever direction is the same as the second lever direction.

CLAIM 22 (ORIGINAL): The device according to claim 15 further comprising a positioning member that maintains the positioning unit in each of the plurality of positions.

CLAIM 23 (ORIGINAL): The device according to claim 22 wherein the positioning member allows the positioning unit to move in the second positioning unit direction in response to movement of the second lever.

CLAIM 24 (ORIGINAL): The device according to claim 23 wherein the motion limiting member moves together with the second lever.

CLAIM 25 (ORIGINAL): The device according to claim 24 wherein the motion limiting member is one piece with the second lever.

CLAIM 26 (ORIGINAL): The device according to claim 15 wherein the first lever and the second lever are coupled to the mounting member such that the first lever and the second lever are located above the bicycle handlebar when the shift control device is mounted to the handlebar.

CLAIM 27 (ORIGINAL): The device according to claim 15 wherein the first lever moves in a first plane, wherein the second lever moves in a second plane, and wherein the first plane is substantially parallel to the second plane.

CLAIM 28 (ORIGINAL): A shift control device for a bicycle transmission comprising:
a mounting member adapted to mount the shift control device to a bicycle handlebar;
a first lever operatively coupled to the mounting member such that the first lever stops at a plurality of positions corresponding to gear positions of the bicycle transmission;

a second lever operatively coupled to the mounting member for movement between a rest position and an operating position such that the second lever returns to the rest position after moving to the operating position;

a positioning unit that rotates to a plurality of positions corresponding to gear positions of the bicycle transmission in response to movement of one of the first lever and the second lever; and

wherein the first lever and the second lever are coupled to the mounting member such that the first lever and the second lever are located above the bicycle handlebar when the shift control device is mounted to the handlebar.

CLAIM 29 (ORIGINAL): The device according to claim 28 wherein the first lever moves in a first plane, wherein the second lever moves in a second plane, and wherein the first plane is substantially parallel to the second plane.

CLAIM 30 (ORIGINAL): The device according to claim 28 wherein the positioning unit rotates to a plurality of positions corresponding to gear positions of the bicycle transmission in response to movement of the first lever and the second lever.

CLAIM 31 (ORIGINAL): The device according to claim 30 wherein the positioning unit rotates to the plurality of positions corresponding to gear positions of the bicycle transmission in response to rotation of the first lever and the second lever.

CLAIM 32 (ORIGINAL): The device according to claim 30 wherein the positioning unit moves in a first positioning unit direction in response to movement of the first lever, and wherein the positioning unit moves in a second positioning unit direction opposite the first positioning unit direction in response to movement of the second lever.

CLAIM 33 (ORIGINAL): The device according to claim 32 wherein the first lever moves in a first lever direction to move the positioning unit in the first positioning unit direction, wherein the second lever moves in a second lever direction to move the positioning unit in the second positioning unit direction, and wherein the first lever direction is the same as the second lever direction.

CLAIM 34 (ORIGINAL): The device according to claim 32 wherein the first lever rotates in a first lever direction to move the positioning unit in the first positioning unit direction, and wherein the second lever rotates in a second lever direction to move the positioning unit in the second positioning unit direction.

CLAIM 35 (ORIGINAL): The device according to claim 34 wherein the first lever direction is the same as the second lever direction.

CLAIM 36 (ORIGINAL): The device according to claim 32 further comprising a positioning member that maintains the positioning unit in each of the plurality of positions corresponding to gear positions of the bicycle transmission.

CLAIM 37 (ORIGINAL): The device according to claim 36 wherein the positioning member allows the positioning unit to move in the second positioning unit direction in response to movement of the second lever.

CLAIM 38 (ORIGINAL): The device according to claim 37 further comprising a motion limiting member that limits movement of the positioning unit in response to movement of the second lever.

CLAIM 39 (ORIGINAL): The device according to claim 38 wherein the motion limiting member is retained to the second lever.

CLAIM 40 (ORIGINAL): The device according to claim 39 wherein the motion limiting member is one piece with the second lever.

CLAIM 41 (ORIGINAL): A bicycle control apparatus comprising:
a mounting member adapted to mount the bicycle control apparatus to a bicycle;
a positioning unit coupled to the mounting member for moving to a plurality of positions;
and
a positioning member that maintains the positioning unit in each of the plurality of positions, wherein the positioning member comprises a material that deforms in response to excessive force

applied between the positioning member and the positioning unit to release the positioning unit from a maintained position.

CLAIM 42 (ORIGINAL): The apparatus according to claim 41 further comprising a first lever operatively coupled to the positioning unit so that the positioning unit moves in response to movement of the first lever.

CLAIM 43 (ORIGINAL): The apparatus according to claim 42 wherein the first lever stops at a plurality of positions corresponding to gear positions of the bicycle transmission.

CLAIM 44 (ORIGINAL): The apparatus according to claim 42 further comprising a second lever operatively coupled to the positioning unit so that the positioning unit moves in response to movement of the second lever.

CLAIM 45 (ORIGINAL): The apparatus according to claim 44 wherein the positioning unit moves in a first positioning unit direction in response to movement of the first lever, and wherein the positioning unit moves in a second positioning unit direction opposite the first positioning unit direction in response to movement of the second lever.

CLAIM 46 (ORIGINAL): The apparatus according to claim 45 wherein the first lever moves in a first lever direction to move the positioning unit in the first positioning unit direction, wherein the second lever moves in a second lever direction to move the positioning unit in the second positioning unit direction, wherein the first lever direction is the same as the second lever direction.

CLAIM 47 (ORIGINAL): The apparatus according to claim 45 wherein the first lever rotates in a first lever direction to move the positioning unit in the first positioning unit direction, and wherein the second lever rotates in a second lever direction to move the positioning unit in the second positioning unit direction.

CLAIM 48 (ORIGINAL): The apparatus according to claim 47 wherein the first lever direction is the same as the second lever direction.

CLAIM 49 (ORIGINAL): The apparatus according to claim 45 wherein the positioning member allows the positioning unit to move in the second positioning unit direction in response to movement of the second lever.

CLAIM 50 (ORIGINAL): The apparatus according to claim 49 further comprising a motion limiting member that limits movement of the positioning unit in response to movement of the second lever.

CLAIM 51 (ORIGINAL): The apparatus according to claim 50 wherein the motion limiting member is retained to the second lever.

CLAIM 52 (ORIGINAL): The apparatus according to claim 51 wherein the motion limiting member is one piece with the second lever.

CLAIM 53 (ORIGINAL): The apparatus according to claim 44 wherein the first lever and the second lever are coupled to the mounting member such that the first lever and the second lever are located above the bicycle handlebar when the shift control device is mounted to the handlebar.

CLAIM 54 (ORIGINAL): The apparatus according to claim 44 wherein the first lever moves in a first plane, wherein the second lever moves in a second plane, and wherein the first plane is substantially parallel to the second plane.

CLAIM 55 (ORIGINAL): A shift control device for a bicycle transmission comprising:
a mounting member adapted to mount the shift control device to a bicycle;
a positioning unit coupled to the mounting member for moving to a plurality of positions;
a first lever that moves in a first lever direction to move the positioning unit in a first gear position direction;
a second lever that moves in a second lever direction to move the positioning unit in a second gear position direction opposite the first gear position direction;
wherein the first lever direction is the same as the second lever direction;
a motion allowing member coupled to the mounting unit to allow movement of the positioning unit in the second gear position direction; and

a motion limiting member retained to the second lever and moving in the second direction to limit motion of the positioning unit in the second gear position direction during operation of the second lever.

CLAIM 56 (ORIGINAL): The device according to claim 55 wherein the first lever direction is one of a clockwise and a counterclockwise direction.

CLAIM 57 (ORIGINAL): The device according to claim 55 wherein the first lever and the second lever are coupled to the mounting member such that the first lever and the second lever are located above the bicycle handlebar when the shift control device is mounted to the handlebar.

CLAIM 58 (ORIGINAL): The device according to claim 55 wherein the first lever moves in a first plane, wherein the second lever moves in a second plane, and wherein the first plane is substantially parallel to the second plane.

CLAIM 59 (ORIGINAL): A shift control device for a bicycle transmission comprising:
a mounting member adapted to mount the shift control device to a bicycle handlebar;
a lever operatively coupled to the mounting member such that the lever stops at a plurality of positions corresponding to gear positions of the bicycle transmission;
a push button operatively coupled to the mounting member for movement between a rest position and an operating position such that the push button returns to the rest position after moving to the operating position;
a positioning unit that rotates to a plurality of positions corresponding to gear positions of the bicycle transmission; and
wherein the lever and the push button are operatively coupled to the positioning unit such that the positioning unit moves in a first direction in response to operation of the first lever and moves in a second direction opposite the first direction in response to operation of the push button.

CLAIM 60 (ORIGINAL): The device according to claim 59 further comprising a positioning member that maintains the positioning unit in each of the plurality of positions corresponding to gear positions of the bicycle transmission.

CLAIM 61 (ORIGINAL): The device according to claim 60 wherein the positioning member allows the positioning unit to move in the second positioning unit direction in response to movement of the push button.

CLAIM 62 (ORIGINAL): The device according to claim 61 further comprising a motion limiting member that limits movement of the positioning unit in response to movement of the push button.

CLAIM 63 (ORIGINAL): The device according to claim 62 wherein the positioning member comprises a first pawl, and wherein the motion limiting member comprises a second pawl.

CLAIM 64 (ORIGINAL): The device according to claim 63 wherein the first pawl and the second pawl rotate around a common axis.

CLAIM 65 (ORIGINAL): The device according to claim 59 wherein the positioning unit rotates in response to movement of the lever and the push button.

CLAIM 66 (ORIGINAL): The device according to claim 59 wherein the push button moves in a substantially straight line from the rest position to the operating position.

CLAIM 67 (ORIGINAL): The device according to claim 59 wherein the push button is operatively hinged to the mounting member.

CLAIM 68 (ORIGINAL): The device according to claim 59 further comprising a cover that surrounds the push button.

CLAIM 69 (ORIGINAL): The device according to claim 68 wherein the push button is pushed into the cover when moving from the rest position to the operating position.

CLAIM 70 (NEW): A bicycle control apparatus comprising:
a mounting member adapted to be mounted to a bicycle;
a positioning unit coupled to the mounting member for moving to a plurality of positions;
a positioning member that maintains the positioning unit in each of the plurality of positions;

wherein the positioning member moves along a first path between an engagement position, where the positioning member engages the positioning unit, and a disengagement position where the positioning member is disengaged from the positioning unit; and

wherein the positioning member moves along a second path that is different from the first path.

CLAIM 71 (NEW): The apparatus according to claim 70 wherein movement of the positioning member along the second path includes movement other than rotation of the positioning member.

CLAIM 72 (NEW): The apparatus according to claim 70 wherein the positioning member moves along the second path when the positioning unit moves to at least one of the plurality of positions.

CLAIM 73 (NEW): The apparatus according to claim 70 wherein the positioning member includes one of a projection and an opening that engages a corresponding other one of a projection and an opening disposed with the mounting member.

CLAIM 74 (NEW): The apparatus according to claim 73 wherein the positioning member rotates around the projection to move between the engagement position and the disengagement position.

CLAIM 75 (NEW): The apparatus according to claim 74 wherein the positioning member includes the projection, and wherein the opening is disposed with the mounting member.

CLAIM 76 (NEW): The apparatus according to claim 70 wherein the positioning unit rotates to each of the plurality of positions.

CLAIM 77 (NEW): The apparatus according to claim 76 wherein the positioning unit includes a plurality of positioning teeth, and wherein the positioning member engages at least one of the plurality of positioning teeth to maintain the positioning unit in each of the plurality of positions.

CLAIM 78 (NEW): The apparatus according to claim 77 wherein the positioning member comprises a positioning pawl.

CLAIM 79 (NEW): The apparatus according to claim 78 wherein movement of the positioning pawl along the second path includes movement other than rotation of the positioning pawl.

CLAIM 80 (NEW): The apparatus according to claim 79 wherein the positioning unit comprises a takeup element for pulling and releasing a control element.

CLAIM 81 (NEW): The apparatus according to claim 80 wherein the takeup element includes a winding surface.

CLAIM 82 (NEW): The apparatus according to claim 81 wherein the winding surface defines a wire winding groove.

CLAIM 83 (NEW): The apparatus according to claim 80 wherein the plurality of positioning teeth are disposed on an outer peripheral surface of the takeup element.

CLAIM 84 (NEW): The apparatus according to claim 80 wherein the positioning pawl moves along the second path when the positioning unit rotates to at least one of the plurality of positions and the positioning pawl is in the engagement position.

CLAIM 85 (NEW): The apparatus according to claim 84 further comprising a biasing member that biases the positioning pawl toward the engagement position.

CLAIM 86 (NEW): The apparatus according to claim 85 wherein the positioning pawl comprises a mounting axle that engages an opening disposed with the mounting member, wherein the positioning pawl rotates around the mounting axle to move along the first path between the engagement position and the disengagement position.

CLAIM 87 (NEW): The apparatus according to claim 86 wherein the opening is an elongated opening, and wherein the mounting axle moves within the elongated opening to move along the second path.

CLAIM 88 (NEW): The apparatus according to claim 87 wherein the mounting opening is formed in the mounting member.

CLAIM 89 (NEW): The apparatus according to claim 87 further comprising a release lever that moves the positioning pawl between the engagement position and the disengagement position.